

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/008408

International filing date (day/month/year)  
27.07.2004

Priority date (day/month/year)  
28.07.2003

International Patent Classification (IPC) or both national classification and IPC  
G06F9/46

Applicant  
SAP AKTIENGESELLSCHAFT

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



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**Box No. I Basis of the opinion**

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1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1-6

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**Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, Inventive step or  
Industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-6
	No: Claims	

Inventive step (IS)	Yes: Claims	
	No: Claims	1-6

Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

1. Reference is made to the following documents in this communication:

- D1: WAANANEN A ET AL: "An overview of an architecture proposal for a high energy physics Grid" APPLIED PARALLEL COMPUTING. ADVANCED SCIENTIFIC COMPUTING. 6TH INTERNATIONAL CONFERENCE, PARA — 2002. PROCEEDINGS (LECTURE NOTES IN COMPUTER SCIENCE VOL.2367) SPRINGER-VERLAG BERLIN, GERMANY, June 2002, pages 76-86, XP002306966 ISBN: 3-540-43786-X
- D2: B. KONYA ET AL: "The NorduGrid architecture and tools" March 2003, XP002306968 Retrieved from the Internet:  
URL:[http://www.nordugrid.org/documents/MOA\\_T003.pdf](http://www.nordugrid.org/documents/MOA_T003.pdf)>

**Re Item IV**

2. This Authority considers that there are two inventions covered by the claims indicated as follows:

I: Claims 1-6:

A graphical user interface, representing a structure with columns and rows, the rows representing services in a grid computing network, the rows structured hierarchically with respect to an application where a service belongs, a type of service and concrete service instances.

II: Claim 7:

A method comprising receiving a request to view a sub grid network, the sub grid representing a root node and nodes with inferior relations to the root node, the nodes representing grid managers managing services in the grid network;  
querying a grid manager representing the root node for its status and addresses of nodes with inferior relations;  
querying inferior grid managers for current status;  
displaying a state of the root and inferior grid managers and for each grid manager, a computer system running the grid manager.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The common concept of the two inventions is the following : representing a view of a computer grid network, the view comprising hierarchically structured services.

However, this concept is disclosed in D1 (page 80, figure 1), which shows a computer grid network ("NorduGrid"), with job management and user management services being hierarchically structured per branch (the "Norway branch" being shown on page 80, figure 1) and per cluster. The two groups of claims are therefore not linked by a single general inventive concept.

As a consequence, the subject-matter of claim 7 will not be examined further in this communication.

**Re Item V**

3. The subject-matter of claims 1-3 appears to be mere presentation of information (Rule 67.1(v) PCT). Notwithstanding this, the subject-matter of said claims will be further examined with respect to novelty and inventive step.
4. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of claims 1-6 does not involve an inventive step in the sense of Article 33(3) PCT.
- 4.1 Document D1 discloses the following subject-matter of claim 1 :

A graphical user interface, representing services in a grid computing network (page 79, lines 8-18) , hierarchically structured with respect to an application where a service belongs (page 79, lines 17,18, page 80, figure 1), a type of service (job management, user management, see page 80, figure 1) and concrete service instances (page 79, lines 17,18, page 80, figure 1).

The subject-matter of claim 1 differs from D1 in that in claim 1, the information is presented in columns and rows, whereas in D1, the information is presented in the style of a file management system (D1, page 80, figure 1).

~~The problem to be solved by the present invention may therefore be regarded as :~~  
how to provide an alternative representation of the grid services information.

Presenting information to users in tabular form, with rows and columns, is a commonly known technique. The skilled person would certainly consider, as one of many straightforward possibilities, the option of displaying the information presented in figure 1 of D1 in tabular form. Such a presentation is used for example in D2, a document which presents aspects of the same grid computing network ("Nordugrid"). D2 discloses (page 8, figure 4) a presentation of computer grid information in tabular form.

As a consequence, the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

**4.2 Document D1 discloses the following subject-matter of claim 4 :**

A graphical user interface, describing a set of services managing a computer grid (page 79, lines 8-18, figure 1), representing computers (clusters) from a set of computers in the computer grid, the rows representing application services, the labels indicating which computer currently runs which application service (page 79, figure 1 : the name of the cluster, "grid.fi.uib.no", is comprised in the labels of the represented jobs).

The subject-matter of claim 4 differs from D1 in that :

first difference : in claim 4, the information is presented in a matrix-like structure, with columns and rows, the columns representing computers of the grid, whereas in D1, the information is presented in the style of a file management system (D1, page 80, figure 1).

second difference : in claim 4, multiple, hierarchically structured grid managers are used, whereas D1 discloses one single grid manager (page 80, lines 2,3).

The first difference has already been discussed in the reasoning for claim 1, and is unrelated to the second difference, since it concerns a pure presentation aspect, whereas the second difference concerns the management of the grid.

--The problem to be solved by the second difference may be regarded as :  
how to manage a computer grid in a scalable and efficient manner.

D2, a document which presents aspects of the same grid computing network as D1 ("NorduGrid"), and would therefore also be considered by the skilled person, discloses that the grid manager, already discussed in D1 (page 80, lines 2,3), is in fact a local grid manager of a computer cluster (see D2, page 2, right column, lines 26-33, page 3, right column, lines 19-24). Since these clusters are hierarchically structured to form the computer grid (see D1, page 80, figure 1), D2 discloses the same solution as claim 4, namely a decentralized and hierarchical grid management system.

As a consequence, the subject-matter of claim 4 does not involve an inventive step in the sense of Article 33(3) PCT.

- 4.3 The subject-matter of dependent claim 2 does not involve an inventive step, since D1 discloses (page 80, figure 1) service instance rows associated to places in the grid structure (the jobs represented on figure 1 are associated with a certain cluster of the grid).
- 4.4 The subject-matter of dependent claim 3 does not involve an inventive step : D1 discloses (page 80, figure 1) information concerning grid nodes (cluster names) being represented in a graphical user interface. The skilled person would certainly consider, as one of many straightforward possibilities, the option of displaying the information presented in figure 1 of D1 in tabular form, with the grid nodes represented by columns.
- 4.5 The subject-matter of dependent claim 5 does not involve an inventive step, since D1 discloses (page 80, figure 1) a shrinkable structure for displaying the application services.



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- 4.6 The subject-matter of dependent claim 6 does not involve an inventive step, since D1 discloses (page 80, figure 1) the application services being structured by class (job management together, user management together).
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